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ABSTRACT

A rationale for language intervention is outlined according to two basic dimensions (increased output and knowledge of language) and their respective strategies (operant procedures and a psycholinguistic model). Thus, behavior modification and transformational grammar are viewed as complementary for an efficient language intervention program. The following basic language intervention needs are delineated: first language learning, second language learning, intermodality transfer, and language rehabilitation. Also, the following ten intervention techniques are presented: correction, expansion, expatiation (simple), expatiation (complex), alternative, completion, replacement, alternative-replacement, combination, and revision. Moreover, the rationale calls for the incorporation of the following principles: informality, active participation, no premium for correctness, variety of stimulation and responses, and peer competition in appreciating intuitive knowledge of language. (Author)

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LANGUAGE INTERVENTION: Two Questions and Ten Techniques

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Language Intervention: Two Questions and Ten Techniques

John R. Muma

Unfortunately, there are numerous vague, ambiguous, partial, and/or contradictory references to language in the applied literature. Chomsky (1965a) has characterized the traditional literature as being subject to caprice, predicated on surface structure, and free from a theory of grammar. Baratz (1969) delineated many of the misconceptions of language and verbal behavior held by educators and psychologists. Thus, it is not surprising that language intervention[1] procedures have been similarly lacking for they have been characteristically predicated on underestimations and misperceptions of the nature and scope of grammar.

The operant and transformational models are no panaceas by any means; however, both models provide disciplined responses to the above complaint. First, consider the operant model. By virtue of the fact that behavior modification is timely (that is, it deals with present behavior) and it is always operational (that is, it is predicated on functional references), the complaint is to a large extent dissipated. Thus, the interventionist can

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[1]Language intervention as used here encompasses both therapy and pedagogy. Consequently, the issue of language differences or deficiencies is circumvented.

become effective particularly in increasing language output whether or not he has a good understanding of the nature and scope of grammar. He has no pressing need to know or label various dimensions of grammar because his tactic is to probe a repertoire of behavior for manageable entries which may or may not be labeled depending upon the functional references of the client. (However, it will be argued below that from the standpoint of increased efficiency it behooves a behavior modificationist to utilize the psycholinguistic literature on the nature and scope of grammar.)

Second, consider the transformational model.[2] The transformational approach toward understanding the nature and scope of grammar is a theory with a relatively well-defined scope and rigor. The scope is very broad for it strives to account for underlying cognitive processes as well as the structure of language. While other approaches to language description provide tenets about the nature of language, particularly the structure of syntax, the transformational theory is based upon a formal system of hypotheses (theory) which extends to cognitive processes underlying grammar. Consequently, the transformational theory is

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[2] The transformational model shall be repeatedly used as representative of a psycholinguistic model because it has provided the major framework in this area. The Illinois Test of Psycholinguistic Abilities (ITPA), Kirk and McCarthy, 1961, classifies performance on language modalities but seems to provide relatively meager evidence of language processing. Consequently, the ITPA ~~shall~~ will not be considered here.

explanatory and descriptive rather than simply descriptive. In regard to the structure of grammar, the scope of transformational generative grammar is the following:

Base rules
  Phrase structure rules
  Lexicon (forms)
Transformational rules
Morphological rules
Semantic rules
  Projection rules
  Lexicon (levels of meaning of concepts)
Phonological or graphemic rules

The rigor of this theory is defined by the following criteria of rule (hypotheses) building: simple, complete, non-contradictory, formal, and explicit (Tuniks, 1963). As a consequence of its rigor, the theory has realized several major revisions (Harris, 1965; Chomsky, 1957, 1965a, 1965b; and Lees, 1966).

In summary, a rationale for language intervention incorporating either the behavior modification strategy or the transformational generative theory of grammar is suggested as a preferred tactic over other language intervention programs appearing in the literature. The relative discipline inherent in the operant procedures and in the scope and rigor of the transformational generative theory of grammar defines these approaches as potentially more effective (efficient) than other previously reported language programs. Thus, the relative contributions of both models toward the development of a language intervention rationale rests upon the notion of efficiency.

The purposes of this paper are twofold. First, it is to present a two dimensional rationale for language intervention. Second, it is to discuss and incorporate some language intervention techniques into this rationale. It is anticipated that the language intervention rationale will be operationally more appropriate (behavior modification) and theoretically more developed (transformational grammar), consequently more efficient, than other language intervention approaches.

Two Basic Questions

It appears clear from clinical and experimental evidence that there are, indeed, two complementary dimensions in language intervention and that a rationale should reflect both dimensions. Perhaps it is best to cast these dimensions into two basic questions, each of which requires unique approaches.

Question I: How can an increase in the amount of verbal behavior be effected?

Question II: How can an increase in the knowledge of language be effected?

These questions simply point out a basic distinction between amount of verbal behavior and knowledge of language;[3] they call

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[3]Alternative ways in which this distinction is made in the literature are as follows:

Question I	Question II
performance	competence
use	knowledge/capacity
quantity	quality
products	processes
vocalization and output	verbalization

for a corresponding distinction in the intervention rationale even though the language behaviors represented are not easily separated.

These questions are not only interrelated but serially related; that is, behaviors relevant to the first question must be manifest before a concerted effort should be made to intervene along the lines of the second question. This is not to say, however, that an intervention program on Question I should be fully realized before initiating a program on Question II; apparently, once output reaches some undefined operant level there appears to be a covarying change in knowledge of language because the speaker varies his style rather than length and number of utterances. The mean length of response (MLR), for instance, is of little value beyond age five (Shriner, 1969). Indeed, Cazden (1966b) and Loban (1963) point out that as output increases (number of utterances) so does knowledge of language. Stewart (1968) indicates that as a person becomes aware of his lack of knowledge of language (or at least dialectal differences between himself and 'significant others'), his output decreases. Consequently, the distinction between amount and knowledge of language affords one the opportunity to appreciate this interrelationship while building an intervention rationale; however, in subsequent operational decisions, it behooves him to focus on the issue of efficiency. It is more efficient to utilize inter-

vention techniques appropriate to either of the two basic questions rather than utilize the same technique for both dimensions of intervention.

Increase the Amount of Verbal Behavior

The principles of behavior modification have proved valuable in increasing, and decreasing, the amount of verbal behavior (Krasner, 1958; Girardeau and Spradlin, In press). However, even though numerous applications of operant techniques have been aimed at increasing language knowledge (Krasner, 1958; Hart and Risley, 1968), they have typically fallen short in realizing their goal even though significant progress has often been reported. (The Guess, et al. (1968) study is an exception for it dealt with a generative feature of syntax). On its face, such a statement appears patently contradictory. However, it is simply a paradoxical situation requiring elucidation.

The explanation rests on two major issues, (a) the conceptualization of language underlying these operant applications and (b) the relative efficiency of performance oriented language intervention in comparison to that which is knowledge oriented. The conceptualizations of the nature, development, and use of language as reflected by most operant studies have been remarkably naive. Two sources of this naivete are apparent, the traditional concepts of the nature, development, and use of language and Skinner's communication scheme, i.e., mand, tact, etc. Behavior

modificationists strive to become operational within the operant strategies at their disposal. Both the traditional concepts and Skinner's scheme (1957) serve the function of providing operational references; consequently, both models provide a license for operant procedures to be used in language intervention.

However, developments in psycholinguistics during the past decade have made substantial inroads on previously held misconceptions of language and language intervention approaches (Palermo, In press). Examples of traditional concepts that have become vulnerable to challenge are the following: the value of mean length of utterance, surface structure, independent modalities, a priori language exercises, arbitrary sequencing and pacing, Latinization of English, rigidity of form classes, formal instruction, etc.

Skinner's communication scheme is just that, a scheme; it is not a theory of language (Chomsky, 1959). While behavior modificationists have typically acknowledged this, their translations in the literature repeatedly reveal that this distinction has been only academic. That is, operant studies that claim to deal with language learning really deal with language performance, i.e. varying the frequency or alternatives of an <u>explicit</u> "dimension" or class of language. In short, the operant studies characteristically deal with language performance and have very little to do with language learning because of the limited

conceptualizations of language. However, this is not to say that language learning does not occur within the context of language performance for it most emphatically does; it is simply asserted that language learning is by definition not as <u>efficient</u> as it could be by employing conceptual underpinnings consistent with the nature, development and use of language presently at our disposal.

This brief detour was necessary so that the operant studies on performance could justifiably be counted on the increased output side of the ledger and thereby set the stage for a more challenging role in the performance dimension of language intervention which the operant procedures appear to be ideally suited. I am referring to environmental antecedents of verbal behavior (both output and knowledge). Cazden has systematically delineated parameters of the environment that pertain to language development and use. These parameters are the following:

1. <u>Context</u>

    a. Warm, accepting, and highly verbal
    b. Peer language models
    c. Variety
    d. Tolerable signal to noise ratio
    e. Active participation in verbal activities

2. <u>Stimulation</u>

    a. No excessive premium for conformity
    b. Linguistic variety
    c. Sequence variety
    d. Quantity

It is suggested that these parameters would provide pertinent conceptual fields for operant procedures. Inasmuch as these parameters embody psycholinguistic concepts, this suggestion is actually an admonition for operant procedures to provide the primary strategy of language intervention with the psycholinguistic literature providing the conceptual underpinnings on the nature, development, and use of language and delineating pertinent paralinguistic parameters.

In view of the intellectual conflict between behaviorists and psycholinguists (Chomsky, 1957; Skinner, 1957; Chomsky, 1959; Wiest, 1967), the notion that operant procedures and transformational grammar are complementary could be viewed by some as unfeasible; indeed, Katahn and Koplin (1968) characterize the arguments as a paradigm clash which can only be resolved by one becoming dominant over the other.

As proponents of each discipline point out, substantial advancements have been made by their particular disciplines. Interestingly, however, the transformational theory of grammar has not been formally extended to intervention issues (Rosenbaum, 1969); consequently, the emerging psycholinguistic concepts are in need of a disciplined strategy. On the other hand, the operant procedures have provided a proven strategy for modifying behavior; consequently, the operant procedures are in need of appropriate conceptualizations to cast their strategy. While the traditional

and Skinnerian conceptualizations of language have provided underpinnings for the operant strategy, these conceptualizations have been shown to be limited. Thus, it is asserted that a language intervention program would be more efficient if it incorporated both the psycholinguistic and operant strategies than if these were used separately.

In regard to increased output, behavior modification appears to provide a significant strategy for obtaining increased language usage particularly when it focuses on pertinent parameters of the environment, more specifically, of the 'context' and 'stimulation.' By virtue of the fact that usage and knowledge of language are interrelated, behavior modification contributes to increased capacity to use language. However, its contribution to language learning is limited in comparison to the transformational generative grammar or psycholinguistic approach.

Increase Knowledge of Language

The transformational generative theory of grammar provides a useful model for increasing one's knowledge of language. More precisely, the psycholinguistic literature employing the transformational theory has provided significant, but by no means complete, information in regard to language learning. Actually, the transformational theory has provided a formal explicit framework from which the processes of language learning could be studied more effectively than heretofore.

It is asserted that the transformational theory will prove to be similarly more advantageous in providing a framework for language intervention. This assertion is based upon: (1) the previously discussed scope and rigor of the theory, (2) some empirical evidence of the increased descriptive power of the transformational theory, and (3) a few strategies of intervention that have emerged from the recent psycholinguistic literature on language learning. The scope and rigor have led to increased understanding of the interrelationship between modalities and various dimensions of language; moreover, the intimacy between the principles of verbal learning and the structure of language has received increased definition with the transformational theory.

Numerous studies have demonstrated the increased descriptive power of the transformational theory. The following are examples: (1) portraying developmental morphologic and syntactic patterns (Menyuk, 1963a, 1963b, 1964a, 1964b; O'Donnell, Griffin, and Norris, 1967; Hunt, 1964) and phonological patterns (Menyuk, 1968), (2) identifying differences in grammar between individuals with and without 'delayed language' (Menyuk, 1964c), (3) understanding interrelationships between imitation, comprehension, and production (Fraser, Brown, Bellugi, 1963), describing longitudinal changes in negative and interrogative systems. In this vein, Lee (1966) has provided a somewhat popularized description of developmental restricted structures for kernel sentences.

The strategies of intervention that have emerged from the psycholinguistic literature seem to fall withingtwo classes, delineation of basically different intervention needs, and techniques and/or principles of intervention. The latter are presented in the following major section.

It has become increasingly apparent that there are several different needs for language intervention and that these needs require unique strategies. In short, it is naive to envision language intervention in a static manner, i.e., one strategy is appropriate for the various needs of language intervention. It is necessary to determine the most salient need and choose, or develop, a strategy of intervention accordingly. Heretofore, determination of the most salient need and its subsequent strategy was as much a matter of caprice, logic, and a priori set as it was knowledge of the nature of language, language learning or description of the deviation of language that warrants intervention. Because the transformational theory has led to more complete description, it has also afforded an increased opportunity to determine language needs and make better judgments on strategy. To date, the goals or strategies of language intervention appear to fall within one of the following areas: first language learning, second language learning, intermodality transfer, and language rehabilitation.

First language learning. The model of first language learning has provided the tacit strategy for most language intervention until recently. The efficiency of this strategy as an overall intervention strategy is questionable in view of the varying needs for language intervention and the alternative strategies of intervention available.

This strategy is appropriate for the very young child without a language. There is evidence that a child's innate capacity for language determines the course but not necessarily the rate at which first language learning occurs (Smith and Miller, 1966). When the child is a few months old until about four years of age, the principles of first language learning permeate his verbal activity. Between four and seven years, the semantic and stylistic dimensions are notably active. Language learning apparently continues beyond this point in subtle ways (Entwisle, Forsyth and Muuss, 1964). Until recently, knowledge of the principles of first language learning was in essence only speculative because it was based upon retrospection and 'explanations' of theory-free longitudinal and cross-sectional data. However, recent evidence on first language learning has become more substantial because it is based upon a theory of grammar and incorporates experimental (Berko, 1958; Palermo and Eberhart, 1968; Entwisle, Forsyth and Muuss, 1964) as well as longitudinal data (Braine, 1963; Brown and Fraser, 1963; Ervin, 1964; Bellugi, 1965; Klima, 1965; Cazden, 1968).

Second Language Learning. This is appropriate for a person who has more than one language in which he must function. Thus, it is necessary for him to learn both and not to substitute a prestigious language for another. This is the basic goal of language intervention for the disadvantaged. They must obtain the language of their home in order to function adequately in their present circumstances but they also must obtain the language of the competitive environment. In short, they need the prestigious language in order to be more socially, educationally, and economically mobile. The principles are to teach differences (with no premium for correctness) of language performance so the speaker can know both languages and make intelligent choices of the language to use in various circumstances.

Intermodality transfer. The teaching of reading and writing is an instance of intermodality transfer. The principles are to make intuitive knowledge of language in one modality, usually speech, explicit and to transfer the explicit knowledge into another modality, usually reading and writing.

Language rehabilitation or compensation. The strategy of intervention for the language deviant groups, notably the aphasics, the deaf, and possibly the retarded is rather vague. Conceptualizations on the nature of language disabilities for these populations are seriously lacking. The situation for aphasia is

somewhat tangential. That is, except for the works of Goodglass and his colleagues (1958a, 1958b, 1960, 1964) and Jakobson (1955), the conceptualizations of language disabilities of aphasia seem to be guided by the informational processing model of Shannon and Weaver (1949), a limited psycholinguistic model. Consequently, the works of Wepman and Jones (1961), Eisenson (1954), and to a lesser degree, Schuell (1957) quantify aphasic symptoms in reference to modality functions with relatively limited quantification on the capacity to use language.

As a result, the strategies of intervention for aphasia have been of two types, a taxonomic approach or a traditional version of first language learning. The taxonomic approach is to simply teach the particular categories of behavior that were identified as faulty on modality performance. It is questionable whether either intervention procedure is very efficient. Holland (1969) provides a more systematic discussion of limitations in language intervention for aphasia. It is suggested that information on spontaneous recovery from aphasia would provide an appropriate (efficient) intervention strategy for aphasia, particularly when compared with similar information on first language learning and intermodality transfer. In lieu of such information and in view of Holland's assessment of aphasia therapy, it appears that the principles of first language learning, second language learning, and intermodality transfer and that the psycholinguistic concepts should be more judiciously employed.

McNeill (1966) argues that the course of first language learning provides the most feasible strategy for language intervention of the deaf. McNeill's admonition provides an improved (more efficient) strategy over most traditional strategies. However, the efficiency of McNeill's suggested strategy needs to be tested in a similar way as that suggested for aphasia. Additionally, perhaps work similar to that of Furth (1964) in which learning was compared between aphasic and deaf children will prove useful in finding mutual areas of verbal behavior thereby delineating aspects of language intervention that are applicable to several populations.

Carroll (1963) provides a comparable admonition in regard to the strategy of language intervention for the retarded.

The whole notion of language rehabilitation and/or compensation and the corresponding question of whether or not a particular population is language different or deviant has only recently become a serious concern. Thus, it is somewhat premature to delimit appropriate strategies of intervention. We must, however, seek alternatives to those presently at our disposal if for no other reason than to provide an opportunity to assess the efficiency of present strategies and to delimit their range and sequence properties of effectiveness.

In summary, it is suggested that the transformational generative theory of grammar holds the most promise for establishing a rationale for increasing language knowledge. Such a rationale will lead to increased efficiency of language intervention for the dimension of

language knowledge. This position was based upon three main points: (1) the scope and rigor of the theory, (2) evidence of increased descriptive power of the transformational theory, and (3) strategies of intervention emanating from the literature. The strategies were viewed as two basic types: intervention circumstances and techniques of intervention. The former included the following: first language learning, second language learning, intermodality transfer, and language rehabilitation. The techniques of intervention are presented in the following major section.

Moreover, it is suggested that the principles of behavior modification and the transformational generative theory of grammar provide complementary aspects of a rationale for language intervention because they deal differentially with the dimensions of language use and knowledge. Moreover, the psycholigistic literature provides significantly improved conceptual underpinnings for the operant strategies.

Intervention Techniques

The following ten language intervention techniques were drawn from the literature. References for most appear in the discussion. These techniques apply to a wide range of grammatical dimensions. The suggested application is limited to the dimensions of language in the original reference. However, the underlying principle of each technique may extend beyond its suggested application area.

The first five intervention techniques are child[4] initiated, whereas the latter five are teacher initiated. Except for a couple of instances, there is no suggestion that one technique is better than another. The notable exception is that all of the techniques provide improved alternatives to the traditional correction model.

Correction Model. The correction model represents the primary tactic of traditional pedagogy. A teacher identifies faulty behaviors and attempts to correct, usually by example, the behaviors. Mellon (1967) reviewed research on this model as it pertained to formal learning of English (style) in the classroom. His conclusion was that this model was not more effective (efficient) than no instruction (control group). Typically traditional pedagogy was predicated upon instruction of 'parts of speech' and an adherence to the principle of correctness of grammar. Recently, these two particular tenets of traditional pedagogy have been found to be especially vulnerable to criticism.

While the correction model apparently has limited application for increasing knowledge of syntax and changing style, Brown and Bellugi (1964) cite rather intriguing naturalistic evidence of its value for semantic development.

Example: Doggy runned---The dog ran. Not, doggy runned.
(child) (teacher)

[4]Examples accompany each technique in which the participants are labeled 'child' and 'teacher.' These labels, however, should not be regarded as limitations of the technique.

Expansion Model. Brown and Bellugi (1964) found that the most common verbal response by parents (approximately 1/3 of the time) is that of expanding a child's utterance. These expansions are syntactically timely because the parents fill in aspects of syntax that are missing. Also, expansions conceivably have some semantic value because of the morphological revisions and completions that occasionally accompany syntactic expansions.

Brown and Bellugi (1964) discussed a related behavior by children. Children reduce the utterances of their parents. Occasionally, parent expansions and child reductions become cyclically interacting. That is, both parent and child verbalize back and forth, one expanding and one reducing. The point of this is that expansions appear to be a significant language learning activity which delimits a role for an adult.

Cazden (1965) had teachers expand the utterances of some disadvantaged nursery school children. She found that after six months the children in the expansion group significantly exceeded a control group on several measures of language.

Example: Doggy bark---The doggy is barking.
(child) (teacher)

Expatiation Model (simple). In addition to expansions, Cazden (1965) had another teacher restrict his responses to simple sentences when talking to disadvantaged nursery school children. Cazden reports that McNeill and she perused the data and found that simple sentences

constituted a significant language intervention procedure which they called expatiation. The essential characteristic is not syntactic but semantic and pertains to language function. More explicitly, the simple sentences placed a premium on the semantic aspects of a child's utterance. In regard to language function, the child's utterance is the locus of communication. Cazden found that expatiation was more effective than expansion, which was in turn more effective than nothing (control group) in learning syntax.

Example: Doggy bark---The doggy's hurt.
(child) Doggies bark but people talk.
(teacher)

Expatiation Model (complex). Expatiation complex is merely a syntactic variant of expatiation simple. There is no research evidence on the effectiveness of this model. As with the previous model, the utterance is the locus of communication. The semantic aspects are featured but diffused in complicated syntactic structures. It is suggested that this model be employed at an advanced stage of intervention.

Example: Doggy bark---The black doggy is named Spotty.
(child) Of all the dogs I know, our doggy barks.
(teacher)

Alternatives Model. Blank and Solomon (1968) had teachers explore the underlying logic of utterances by preschool socially disadvantaged children. Actually, this particular model is only one of nine

that were found effective in 'developing abstract thinking.'[5] Only the alternatives model is cited here because it is one that readily pertains to the knowledge dimension of language intervention. The alternatives model deals with the role of language in the development of logic. This model is not to be confused with the replacement model discussed below.

Example: Doggy bark---Yes. How can you tell? Is it a big
(child) doggy or a puppy?
How do you think he feels when he barks?
(teacher)

Completion Model. Bandura and Harris (1966) provided children and adults with a single word or phrase and asked them to use it in a sentence. They were interested in whether or not children utilized the syntactic models employed by the adults. The data indicated that children do indeed utilize the available model in this type of task.

The salient features of the task are of interest here. First, this is a teacher initiated and contrived task. Second, it is an exercise in knowing the constituent equivalence of the sentence nucleus material. Subjects had to know that a noun was presented and and how nouns can be incorporated into noun phrases in turn could be incorporated into various aspects of sentences.

A variation of the completion model has been used in foreign language teaching. Rather than presenting a single word or phrase,

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[5] The Blank and Solomon (1968) article provides excellent models for operant procedures and a very good discussion of the nature of stimulation.

a nearly complete sentence would be presented. In this instance, a single word or phrase may be all that is necessary to satisfactorily complete the sentence. However, there is no premium for a minimum response; a single required element with many modifiers would be acceptable also. Thus, the completion model provides an exercise in syntax (constituent analysis and, in the latter example, observing constrains of syntax) and semantics (concept boundaries and selection from classes).

Example:
Doggy----------The doggy ran home.
The doggy is---------The doggy is black.
The doggy is barking.
The ____ is old ----The doggy is old.
(teacher) (child)

Replacement Model. Gunter (1960) discussed the appropriateness of utilizing proportional drill in altering syntax of children. In principle, the drill specifies all dimensions of a sentence except one and the object is to complete the sentence on the basis of constituent analysis and contingencies in the grammar. Thus, proportional drill pertains to the completion model; however, it appears to be more powerful when presented as a replacement model because there are more alternatives that could be operantly taken. That is, by utilizing a replacement model rather than a completion model, which is by definition deleted according to a teacher's priority system, an individual could choose the particular dimensions of syntax that met his needs.

Operationally, a teacher presents a sentence and instructs the child to replace one element with another, several others, or to

delete an element. There is no premium for a particular replacement except of course if you are dealing with perseveration.

Example: The doggy is barking---My doggy is barking.
The doggy is old-------The chair is old.
(teacher) (child)

Alternative-Replacement Model. Krasner (1958) reported that Taffel (1955) and others had subjects select exemplars from a specified form class and link it with a particular word in another form class. While these studies had some conceptual weaknesses on the nature of language and language learning, the principle of alternatives in syntactic linkage is a viable one. In regard to the conceptual weakness, one improvement of this model would be to incorporate false and/or derived exemplars so that subjects could explore contingencies and generative features of their grammar as well as minimize the problem of overlearning. An appropriate source of false exemplars is the protocols of the subjects in question. This variation is suggested because it more closely replicates a natural first-language learning activity, e.g., children's verbal play frequently incorporates intentionally silly morpheme combinations.

Example: I He reads
He reads---
They They read
We
(teacher) (child)

Combination Model. Mellon (1967) presented a series of sentences to junior high school children and asked them to combine the sentences in any way they wanted. The children worked in small groups, competed

with their peers, and did not discuss parts of speech. A variety of novel yet grammatically acceptable sentences emerged as well as the garden varieties. Interestingly, these children were found to be two years advanced in writing skills above both a control group that discussed English literature and the traditional English class that instructed parts of speech and parsing procedures. This advancement was within a six month period in which the students spontaneously explored their intutitive knowledge of grammar.

The salient features of this intervention procedure apparently extend beyond the combination model. The additional characteristics shall be mentioned below. The combination model, per se, appears to provide an exercise in exploring the syntactic alternatives of grammar. These alternatives are predicated on an understanding of phrase structure and variations on phrase structure (transformations) as well as semantics.

Example: The doggy is barking.
The doggy is old.
The doggy is in the street---The old dog that is barking is in the street.
(teacher) (teacher)

Revision Model. O'Donnell (1967a) presented a short syntactically and semantically contrived story to late elementary students. The students were instructed to rewrite the story. The general principle was that students were asked to revise a model of grammar. O'Donnell used this procedure to ascertain how children would alter a passage with kernel sentences. However, the technique could be

readily useful as a diagnostic and intervention tool for other aspects of syntax.

Diagnostically, a passage could be prepared to assess the degree to which a person employs various structures, i.e., transitive system, etc. On an intervention basis, the revised model would provide semantic and syntactic information that would be useful for a subsequent model. For instance, a client's revision of a passage of kernel sentences may center on the BE kernel sentence. Subsequent models may or may not employ BE kernel sentences depending upon the nature of his revision and the nature of his problem with language.

Example:

The doggy is black. His name is Spotty. The doggy eats popcorn. He lives in a house. The house is big. (teacher)	Spotty, the black doggy, likes popcorn. Spotty lives in a big house. (child)

Summary of Intervention Techniques. The above intervention techniques dealt mainly with the syntactic (and morphological) and semantic aspects of language. They were presented as intervention alternatives to the traditional correction model. The first five techniques were based upon child initiated activities and teacher responses; the last five were based upon teacher initiated activities and child responses.

The salient features of the ten techniques were mentioned. It is suggested that a language intervention strategy should take these techniques into account. Inasmuch as it is becoming apparent that

variety is a significant dimension of stimulation in language learning, it is suggested that these techniques be used in combination. Perhaps a good tactic would be to determine which of these techniques is most appropriate for the particular intervention need at hand. Then, the pivotal technique could be supplemented with other techniques to obtain variety.

Two other guidelines are very important. They are peer competition in exploring intutitive knowledge of grammar (McNeill, 1965), and informal teaching (Coleman, 1968). Under these guidelines, the teacher's role is considerably different from the traditional role. There is no premium for correctness, rather variations and alternatives of language usage are sought. The teacher does not instruct in the sense that her language or the textbook are the models to emulate. Rather, comparisons are made between peers as to solutions of linguistic exercises. Often, the very unusual utterance is the most instructive in regards to exploring one's intuitive knowledge. Inasmuch as peers are working together and comparing their efforts with other peers the products are likely to be more meaningful (emotionally and intellectually) than a workbook product. Moreover, the informal nature of this activity elicits active participation in learning one's language (Cazden, 1966a, 1966b).

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